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Ganglion transmission during experimental impairment of acetylcholine synthesis (Russian)

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Abstract

Transmission of excitation in the cats' superior cervical sympathetic ganglion was studied under conditions of experimental impairment of acetylcholine synthesis by either partial removal of the pancreas or the effect of menadione. Pancreatectomy caused a 3 fold decrease of acetylcholine (ACh) in ganglion homogenate, and the ganglion perfusion by Ringer Locke solution containing menadione decreased ACh secretion in the nerve endings 4.2 fold in the presence of ACh deficiency, the latency and amplitude of action potentials in postganglionic trunk increased, the functional stability of the ganglion structures decreased, the pessimum (protective inhibition of reactivity) development accelerated, and posttetanic potentiation vanished. These changes are thought to be due to exclusion of the regulatory influence of ACh on presynaptic elements of the sympathetic ganglion.